AN ABSTRACT OF THE THESIS OF

E. Matthew Skene for the M.S. Degree in Education

Date thesis presented July, 1937

Title STUDENTS WHO FAIL ALGEBRA
A STUDY OF STUDENTS REPEATING ALGEBRA I

Abstract Approved: [Signature]
(Major Professor)

The problem was:

(1) To what extent do high school freshmen fail
    algebra I, and how does that failure affect
    their high school career?

(2) What is the cause of failure?

(3) What procedures would reduce the number of such
    failures?

The following records available in the high school were
utilized: permanent record cards, registers, teachers' class
books, and special reports. From these it was found that the
number of failures varied from 5 to 25 percent from year to
year, that 43 per cent of those repeating algebra I failed a
second time, that 59 per cent of the students who repeated
algebra I were eliminated from school as compared with 43 to
46 per cent of the freshmen, that 35 per cent of the students
who failed all subjects their first semester in high school
passed algebra I on the second try, and that 29 per cent of the
students who failed all subjects during their first semester
finally graduated from high school.

A case study was made of 21 members of the last class repeating algebra I and of 10 members of previous classes still in school. The causes of failure were different in each case and ranged from trivial, easily preventable factors to extreme maladjustment problems. Intelligence as a primary causal factor did not appear. Faulty elementary school training appeared, but always in conjunction with, and overshadowed by, other causes. 42 per cent of the members of the problem group adjusted themselves with little or no assistance. Of those who showed inability to adjust themselves, 19 per cent were eliminated from school, 13 per cent were aided in their adjustment, 16 per cent are still definitely maladjusted, and 10 per cent are doubtful.

In consequence of the wide diversity of the causes of failure, the only means of assistance would be the individual case study method. Such a program would have to start more as a remedial than as a preventative agency, limiting the program to those showing definite need of assistance. The counseling staff would be formed of members of the teaching staff having special training and ability, and would be organized on a clinical basis.
STUDENTS WHO FAIL ALGEBRA:
A STUDY OF STUDENTS REPEATING ALGEBRA I

by

E. MATTHEW SKENE

A THESIS
submitted to the
OREGON STATE AGRICULTURAL COLLEGE

in partial fulfillment of
the requirements for the
degree of
MASTER OF SCIENCE

July 1937
APPROVED:

Professor of Education

In Charge of Major

Head of Department of Education

Chairman of School Graduate Committee

Chairman of College Graduate Council
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.</td>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>The City of Hillsboro</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Hillsboro High School</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>The Curriculum</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>The Problem Class</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>The Scope of the Study</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Sources of Material</td>
<td>5</td>
</tr>
<tr>
<td>II.</td>
<td>ANALYSIS OF PREVIOUS CLASSES</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>A Survey of the Field</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Elimination</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Grades</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>Graduations</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Conclusions from the Analysis</td>
<td>18</td>
</tr>
<tr>
<td>III.</td>
<td>CASE STUDIES</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Case Studies</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Summaries of Test Results</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td>Conclusions from Case Studies</td>
<td>61</td>
</tr>
<tr>
<td>IV.</td>
<td>RECOMMENDATIONS</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td>Establishment of a Counseling Service</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td>Costs and Benefits to be Expected</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td>Need for a Central Record System</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>Opportunity for Counseling</td>
<td>71</td>
</tr>
<tr>
<td></td>
<td>Procedure</td>
<td>71</td>
</tr>
<tr>
<td></td>
<td>Results to be Expected</td>
<td>73</td>
</tr>
<tr>
<td>plate</td>
<td>facing page</td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>I. Enrollments</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>II. Elimination</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>III. Grades</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>IV. Graduations</td>
<td>16</td>
<td></td>
</tr>
</tbody>
</table>
LIST OF TABLES

<table>
<thead>
<tr>
<th>table</th>
<th>page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Columbia Research Bureau Algebra Test</td>
<td>56</td>
</tr>
<tr>
<td>Test 1, Form A</td>
<td></td>
</tr>
<tr>
<td>II. Columbia Research Bureau Algebra Test</td>
<td>57</td>
</tr>
<tr>
<td>Test 1, Form B</td>
<td></td>
</tr>
<tr>
<td>III. Otis Group Intelligence Scale</td>
<td>58</td>
</tr>
<tr>
<td>Advanced, Form A</td>
<td></td>
</tr>
<tr>
<td>IV. New Stanford Achievement Tests</td>
<td>59</td>
</tr>
<tr>
<td>Advanced, Form W</td>
<td></td>
</tr>
</tbody>
</table>
ACKNOWLEDGMENT

The author wishes to take this opportunity to thank Dr. R. J. Clinton and the members of the Hillsboro High School staff for their assistance and cooperation in completing this study.
STUDENTS WHO FAIL ALGEBRA:
A STUDY OF STUDENTS REPEATING ALGEBRA I

CHAPTER I

INTRODUCTION

In the Hillsboro high school, the question has been frequently raised as to what should be done with the students who fail during their freshman year. It is recognized that many of the failures are needless, but the question of what to do still remains unanswered. This study is an attempt to answer this question, partially at least, with respect to the students who fail algebra I.

The City of Hillsboro

Hillsboro is the county seat of Washington County. The population is about 3000. In addition to the ordinary merchandising businesses, there is a large cannery, a milk condensing plant and a sawmill. Hillsboro is a junction point of the Southern Pacific West Side and Tillamook lines, and many railway employees make their homes there. In the country, mixed farming is the source of livelihood except in the hills where lumbering is carried on. Dairying is possibly the principal type of farming.
Hillsboro High School

Hillsboro Union High School district was formed in 1926 with an enrollment the first year of nearly 400, a staff of 16, and an assessed valuation of $5,000,000. A new building with excellent facilities for classroom instruction and for extra-curricular activities was completed in 1928. The present enrollment is nearly 600, twenty full-time teachers are employed, but the assessed valuation is still $5,000,000. The tax levy is 11.5 mills, and the average cost per student is $76.84. About 40 percent of the students come from the Hillsboro City District, which is, of course, wholly separate from the Union High School District. The remainder of the students come from the rural districts forming the rest of the union district and from the non-high school districts adjoining. The number of tuition students is 136.

The Curriculum

The subjects open to the students include strictly academic, commercial, home economics, and industrial arts. At present, Latin is the only foreign language offered, and, due to lack of demand, the first year of the subject was not taught this year. Three years of mathematics are offered, two years of history, and two years of other social science. Physics, botany, and biology are available to the
students. Bookkeeping is open to sophomores; the other commercial subjects are not open to students during the first two years. Two years each of shorthand and typing, one and one-half years of bookkeeping, and a semester each of commercial arithmetic, commercial law, and commercial geography are offered. The home economics department offers two years in foods and two years in clothing. These subjects are open to students in any year of their high school work. The industrial arts department offers three years in woodworking, carpentry, cabinet making, and mechanical drawing.

The Problem Class

Algebra has been required of all freshmen during the period covered by this study. Freshmen have also been required to take general science both semesters and English grammar the first semester, followed by general literature the second. The boys have been permitted to choose between world history and manual training, and the girls between world history and domestic arts.

During the second semester of each year, there has been a problem class in algebra for those who failed algebra the previous semester. In all other subjects, the students have been permitted to continue the second semester of the course regardless of the grade in the first semester. Any students entering at midyear were excluded
from this study.

The only guidance available to the students has been that offered by the Principal and the Superintendent. Naturally, they have not had sufficient time to make comprehensive case studies of any of the individuals.

The Scope of the Study

The study is divided into two parts: An analysis of the problem classes in algebra during the last ten years, and a detailed study of the individuals in the 1936-37 class. The first part is an effort to determine the degree to which the students made their adjustment to the high school situation without any guidance. The second part is an effort to determine to what extent the case study method might be of service in assisting these students to make their adjustments. In each case the following questions were kept in mind: Could the failure during the first semester have been prevented? Can the student continue without additional aid, and if not how can he be assisted?
Sources of Material

For analysis of previous classes:

Annual school reports,
School registers,
Teachers' class books,
Permanent record cards,
Special reports for Superintendent.

For case studies:

Standardized tests:

Otis Group Intelligence Scale,
  Advanced, Form A

New Stanford Achievement Test,
  Form W

Columbia Research Test for Algebra,
  Form I A and Form I B

Orleans Algebra Prognosis,
  Form A

Bell Adjustment Inventory,

Additional sources:

New York Rating Scale for Study Habits,

Eighth Grade Examination Records,
  For rural students
    County Superintendent's Office

Elementary school marks,
  For city students
    City Superintendent's Office

Physical education medical examinations,

Reports on Home,
  By school nurse or author
Personal interviews with parents.

Personal interviews with students.

The Otis intelligence test is generally recognized as one of the most reliable of the group tests, although it may give an IQ slightly high. The difference would not exceed four points at the very most. The New Stanford Achievement Test is standardized to give either the educational age of the student or the grade to which that age is equivalent. It is considered to be one of the most reliable of such tests.

The Columbia Research Test for Algebra is an achievement test in algebra and is well standardized. Both forms used cover one semester's work in algebra. Form A was used at the beginning of the semester for all members of the problem group, and form B at the end of the semester.

The Orleans Algebra Prognosis is designed to rate a group of students according to their ability to comprehend general principles and apply them to specific problems. A standardization is included, but it is not reliable since the amount of introductory algebra material given in the elementary school differs greatly in different systems. It proved to be of little value in this study, being more a measure of achievement during the previous semester than a measure of aptitude. Such a test is designed...
only for students who have never taken algebra.

The Bell Adjustment Inventory is of the questionnaire type and rates the student according to his adjustment to his home, his health, his social adjustment, and his emotional stability. While these ratings are fairly reliable, the greatest benefit is the leads it gives in determining the cause of the maladjustment.

The New York rating scale is designed to be marked by the teachers and gives the choice of three levels on nine study traits: attention, neatness, honesty, interest, initiative, ambition, persistence, reliability, and stability. The extreme variation between ratings given by different teachers makes it more a measure of adjustment to the given class rather than a measure of the personal habits of the individual.

In the cases of rural students, the only practical method of getting a report on their grade school work was the eighth grade examination grades on file in the County Superintendent's Office. Since these were graded by the teachers, it is possible that the scores were unduly high in some cases.

The Junior High School in Hillsboro includes the sixth, seventh, and eighth grades. The school maintains no individual record file. The only source of information was the file of grade report sheets made out by the teach-
ers. The home room system was used so that each class was recorded on one sheet. The marks were S or S plus passing, and U failing. Each student was traced back three grades, and some students showing irregularity were traced back to the second grade.

The physical education medical examinations were of little value, there being little shown on the records not noticeable to any observing person. The eye examination measured nothing more than the ability to read letters and figures on a wall chart. Many students with defective hearing were not so listed on the records. A simple heart test was given and the results of a Tuberculin test was available for part of the students.

Many of the homes of the problem cases had been visited by the school nurse so that some information was available for most of the cases. In some other cases, the author visited the home when the information was felt to be necessary.

In a few cases, an interview was arranged with the parents when the study indicated that the home might be the source of the difficulty. In some other cases, it was evident that nothing could be accomplished by such an interview, even though the fault probably lay in the home.

At least one personal interview was had with each of the students studied, and in many cases frequent confer-
ences were held.

All information obtained was recorded and filed in folders under the name of the student.
Plate 1.

ENROLLMENTS

Total School Enrollment
Total Freshman Enrollment
Problem Class Enrollment

Note:
There were two sections of the problem class under different teachers in 1931-32.
CHAPTER II

ANALYSIS OF PREVIOUS CLASSES

A Survey of the Field

The graph on the opposite page indicates the total school enrollment, the freshman class enrollment, and the enrollment in the problem class in algebra for each of the ten years covered by this study. (These were not plotted to the same scale since the quantities varied to such extremes that it would have been impossible to show them clearly.) The enrollment in the problem class was divided to indicate the portion passing, failing, and dropping during the semester.

The enrollment of the problem class in algebra varies during the ten year period in a rather irregular manner without any adequate explanation being apparent. There appears to be little correlation between the success of the students under different teachers, or even under the same teacher from year to year.

The small enrollment in the problem class during the first two years may be explained on two grounds: Either the students were of an unusually high level of scholarship during those two years, or the standards upheld by the teachers were lower than during the later period. Since two of the mathematics teachers were comparatively
new to the system at the time, it might be possible that the latter was the case.

In the first semester of 1931-32, there was an unusually high number of failures in the classes of one teacher. Many of those students failed only in algebra.

In 1935-36, many problem students had failed in all four subjects, and many were taking algebra for the third and fourth time.

In 1936-37, the failures for the entire freshman class were lower than the preceding year.
Plate II.

ANNUAL ELIMINATION
From Student Body
(9 yrs., 5134 students)

\[ 87\% \text{ finished year} \]

16\% elim.

\[ \text{fig 1} \]

From Freshman Class
(9 yrs., 959 freshmen)

\[ 84\% \text{ finished year} \]

16\% elim.

\[ \text{fig 2} \]

ELIMINATION EACH SEMESTER
From Problem Classes
(9 yrs., 254 students)

\[ 82\% \text{ finished semester} \]

18\% elim.

\[ \text{fig 3} \]

NUMBER OF SUBJECTS FAILED FIRST SEMESTER
(9 yrs., 249 problem students)

\[
\begin{array}{|c|c|c|c|}
\hline
\text{1 subj.} & \text{2 subj.} & \text{3 subj.} & \text{4 subj.} \\
22\% & 28\% & 27\% & 23\% \\
\hline
\end{array}
\]

\[ \text{fig 4} \]

NUMBER FAILING ENGLISH
(9 yrs., 258 problem students)

\[ 63\% \text{ failed English grammar} \]

\[ \text{fig 5} \]
Elimination

Figures 1 and 2 on the opposite page show the average elimination in per cent for the years 1927 to 1936 inclusive. The elimination from the entire student body, shown in figure 1, was obtained by counting the enrollment and the drops as shown on the registers for each year. These quantities for all of the nine years were totaled and converted to per cents.

The per cents shown in figure 2 were obtained in the same way from the freshman enrollment in the registers.

The enrollment and the drops in the problem classes were found in the teachers' class books. The quantities for the nine years were totaled and converted into per cents in the same way as above. Figure 3 shows the results. The per cent eliminated from the problem classes in one semester exceeds that of the freshmen for an entire year.

Figure 4 shows the distribution of the problem students into groups according to the number of subjects they failed during their first semester. The permanent record cards filed in the Principal's office list for each student the subjects failed with the dates. From these it was a simple matter to tabulate the students enrolled in the problem classes into groups according to the number of subjects they had failed the previous semester. It is in-
Interesting to note that the four groups are approximately equal in size.

From the data used in the above tabulations, it was found that 63 percent of the problem students also failed English grammar. The result is shown in figure 5.
Plate III

GRADES

Student Body first sem. 35-36
(598 students)

fig. 1

Freshmen first sem. 35-36
(216 freshmen)

fig. 2

Freshmen first sem. 35-36
(149 freshmen)

fig. 3

GRADES RECEIVED IN THE PROBLEM CLASS
(entire group of 255)

fig. 6

57 students who failed 4 subjects

fig. 7

62 students who failed 3 subjects

fig. 8

64 students who failed 2 subjects

fig. 9

45 students who failed 1 subject

fig. 10
GRADES

Figure 1 on the opposite page shows the per cent of the student body failing one or more subjects for the first semester of 1935-36. For that year only, there was a report made up for the Superintendent at the end of the first semester listing the students who failed and the subjects they failed. The per cent was obtained by counting the number of names on the list and dividing by the school enrollment.

From the report used in the above tabulation, a similar count and calculation was made for freshmen and the results were shown in figure 2 on the opposite page.

For the year 1936-37, an incomplete tabulation was made up from the permanent record cards showing the number of freshmen failing and the number of subjects failed. Since the tabulation included 149 of the 226 freshmen, it should give a fairly good approximation. The results, expressed in per cents, are shown in figure 3.

Since the data for figures 2 and 3 were obtained from entirely different sources, a comparison of the two is an indication of the accuracy of the relationships obtained.

Figures 4 and 5 on the opposite page show the distributions of the freshmen tabulated as failing in the previous paragraphs in terms of per cents failing one, two, three, or four subjects.
Figure 6 shows the grades received in algebra by the students of the problem classes at the end of the second semester. This tabulation was made up from the class books of the teachers who taught the problem classes from 1927 to 1936 inclusive. Students who transferred to other high schools were excluded from the tabulation. Students who dropped from the course were included with the failing group. The grades used in the tabulation were 1, 2, 3, and 4 passing, 5 failing. The per cent receiving each grade was formed into the distribution graph shown. Note the per cent failing as compared with figures 1, 2, and 3.

In figures 7 to 10, the tabulation used in the preceding paragraph was divided and separate distributions graphed for the groups failing four, three, two, one subjects during the previous semester.
Plate IV

GRADUATIONS

Decrease in Enrollment
(1373 freshmen)

<table>
<thead>
<tr>
<th></th>
<th>Senior</th>
<th>Eliminated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduated</td>
<td>54%</td>
<td>46%</td>
</tr>
</tbody>
</table>

Graduations from 306 Freshmen

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduated</td>
<td>57%</td>
<td>43%</td>
</tr>
</tbody>
</table>

fig 1

GRADUATIONS FROM PROBLEM CLASSES

Entire Group
(135 students)

<table>
<thead>
<tr>
<th></th>
<th>Attending</th>
<th>Graduated</th>
<th>Eliminated</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9%</td>
<td>33%</td>
<td>59%</td>
</tr>
</tbody>
</table>

fig 3

4 Subject Failures
(58 students)

<table>
<thead>
<tr>
<th></th>
<th>Graduated or Attending</th>
<th>Eliminated</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>29%</td>
<td>71%</td>
</tr>
</tbody>
</table>

fig 4

2 Subject Failures
(63 students)

<table>
<thead>
<tr>
<th></th>
<th>Graduated or Attending</th>
<th>Eliminated</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>54%</td>
<td>46%</td>
</tr>
</tbody>
</table>

fig 6

3 Subject Failures
(62 students)

<table>
<thead>
<tr>
<th></th>
<th>Graduated or Attending</th>
<th>Eliminated</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>35%</td>
<td>65%</td>
</tr>
</tbody>
</table>

fig 5

1 Subject Failures
(48 students)

<table>
<thead>
<tr>
<th></th>
<th>Graduated or Attending</th>
<th>Eliminated</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>73%</td>
<td>28%</td>
</tr>
</tbody>
</table>

fig 7

LENGTH OF STAY IN SCHOOL

(134 problem students)

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>28%</td>
<td>16%</td>
<td>13%</td>
<td>17%</td>
<td>16%</td>
</tr>
</tbody>
</table>

< 2 < 4 < 6 < 8 or more

fig 8 (semesters)

< = less than
Graduations

Figure 1 on the opposite page shows, in per cents, the decrease in enrollments from the freshman to the senior classes. The data was taken from the annual school reports. The freshman figures in the years 1927 to 1934, and the senior figures in the years 1930 to 1937 were included in the tabulation. The per cent was obtained by dividing the total of the senior enrollments by the total of the freshmen enrollments.

The graduations from 306 freshmen who entered in 1931 and 1932, in terms of per cent of freshmen, are shown in figure 2. The data for this tabulation was taken from the permanent record cards. The similarity between this graph and figure 1, which was obtained from an entirely different source, indicates that the relationship obtained is fairly reliable. Students transferring to other schools were not included in the study.

The graduations from the problem group are shown in figure 3. Students who transferred to other high schools were not included in the tabulation. One hundred thirty-five students in the years between 1927 and 1934 were included in calculating the per cent graduating. The data was obtained from the permanent record cards. It is to be noticed by comparison with figures 1 and 2 that a smaller per cent of the problem students graduated.
Figures 4 to 7 are repetitions of figure 3 for the portions of the above group failing four, three, two, or one subjects respectively during their first semester in school. It is significant that 29 per cent of the students who failed four subjects during their first semester in high school graduated or will graduate soon.

Figure 3 shows the length of stay of 134 students enrolled in the problem classes between the years 1927 to 1934. The 9 per cent still attending will very likely graduate. Nearly all of the students attending eight or more semesters graduated. It is to be noted that the elimination is highest during the first year.
Conclusions From the Analysis

In the problem classes, many students readjusted themselves, continued with their high school work and eventually graduated. Many students who failed as many as four subjects during their first semester made this adjustment. However, many were unable to adjust themselves and dropped out of school.

The problem then arises: First, could any of these students, who adjusted themselves later, with the help of a sympathetic adviser, have made their adjustment early enough to avoid failing in their subjects during the first semester? Secondly, could such an adviser assist those students representing real problems of adjustment sufficiently to enable them to continue in school?

To attempt an answer to these questions, a case study was made of all the members of the present class and of some members of previous classes still in school, but not yet adjusted to the school situation. In each case, an effort was made to discover the cause of failure, whether the present adjustment is sufficient to permit the student to continue without assistance, and, if not, what steps would be of most assistance to the student. Every effort was made to assist the student in adjusting himself when it was found that he could not make the adjustment by himself.
CHAPTER III

CASE STUDIES

L.B.  FRESHMAN, AGE 16, MALE
City student
Prognosis—Favorable

During the first semester, he passed only in general science. His grade school record was excellent. He works after school cutting and carrying in wood for three families, then after supper delivers milk for two hours. During the first semester he was absent for about four weeks during the third six-weeks due to an attack of the flu which returned because he attempted to return to school and to his work too soon.

At the end of the second semester, he passed only in English and algebra I. Again the failures were due to absences which, since his outside work prevented him from giving extra attention to his subjects, left him behind the other members of his class. However, if the economic condition of the family continues to improve as it has during the last six months, there is every reason to expect that L.B. will be able and willing to give more time to his school work next year.

Note:—○ indicates that one or more of the failures were needless.
C.B.*

Third Year, Age 16, Male
Country Student
Prognosis—Favorable

During the first five semesters, he has earned six credits. Twice he has dropped out of school before the end of the semester. No record of his elementary school work is available, but he says that he made very good marks. His IQ is 115, and he tests 10 plus grade on the Stanford achievement test. The Bell inventory shows a slightly unsatisfactory emotional score. In class he is very anxious to recite, even when he does not know the answers. He frequently asks irrelevant questions. He is reasonably popular with both sexes. His father was fairly well to do, but lost his money in Florida land. The father is now a car salesman for a car agency in town, but has taken to drink. C.B. wishes to become a lawyer.

The author had him in world history where, with considerable encouragement, he made his credit both semesters. He repeated algebra three times from the author. The first time, he could not be interested to the extent of making any effort. The second time he dropped out before the end of the semester. The third time, he easily led the class, and wrote the best examination. He started the second semester of algebra, but dropped out of school after a few weeks. He did not enroll in algebra this
semester. The author has him in two classes now, American history and commercial geography, where he is keeping his work up in excellent condition. He is passing in all subjects with average or better grades now. He is difficult to handle in class because he is easily provoked into entertaining those sitting around him. It is hard for him to concentrate in class. The change this semester has been due to the fact that all of his teachers have understood his situation and have made special efforts to encourage him. He can no longer be classed as a problem.

Note:-- * indicates a student apparently not capable of making his own adjustment to the school situation.
M.B. O
Freshman, Age 14, Female
Country Student
Prognosis—Favorable

She failed only in algebra last semester. The cause seems to have been timidity which kept her from obtaining needed help from the teacher. Becoming discouraged, she made no further effort to keep up her work. This semester, with a different teacher and a fresh start, there has been no further difficulty. Her IQ is 108 and the Stanford achievement test places her at the 8.9 grade. She tested in the 25th percentile on the achievement test in algebra given at the first of the second semester.
C.C.° Freshman, Age 15, Male  
City Student  
Prognosis--Favorable

He failed only in algebra last semester. At the first of the year a mastoid operation kept him out of school for two weeks. In algebra, he found himself behind the others, and, not understanding the kind of work they were on, he made no further effort. Since he has an IQ of 120, he could easily have overcome the small handicap due to the loss of time if he had sympathetic guidance. He is now making better than average grades in all subjects.
He failed in algebra and manual training last semester. His eighth grade marks are better than average. The cause of failure seems to have been due to some extent to irregular attendance coupled with erratic work when present. The Bell inventory rates him as very retiring socially and unsatisfactory emotionally. His IQ is 110 and the Stanford achievement test places him at the 8.2 grade level. He is now making average marks, and is making B grades in algebra. According to the achievement test given at the end of his first semester, he was in the 14th percentile in algebra. He did not take the achievement test given in algebra at the end of the year.
M. D. O.

Freshman, Age 14, Female
City Student
Prognosis--Favorable

With the exception of algebra, she made better than
average grades during the first semester. The cause of
failure is not clear, but there seemed to be a lack of
understanding between teacher and pupil. At any rate,
she is now passing in all subjects, is making her best
marks in algebra, and says she likes algebra the best
of any of her subjects. Her IQ is 114 and the Stanford
achievement test places her in the tenth grade.
F.D.  
Freshman, Age 14, Female  
Country Student  
Prognosis--Favorable

She failed only in algebra last semester, and is now making good grades, with her best marks in algebra. She received a grade of 2 for the third six-weeks in the first semester of algebra, but failed the first two six-weeks and the final examination. She says that she found none of her algebra difficult. However, as she was absent when the test was given, there is no score available on the Columbia Research Test to indicate how much information she accumulated during the first semester in algebra. Her present instructor reports that she could, in his opinion, have handled the second semester of algebra. Her IQ is 118 and she tests 9.7 grade. She is rated high in study habits by her teachers according to the New York Scale.
B.E.  Freshman, Age 15, Male  
City Student  
Prognosis--Favorable

Last semester, he failed in algebra and in manual training. In the Junior High, he was in the slow group and made some low grades. However, his IQ is 118 on the Otis test, and his achievement test places him above the tenth grade. He did not take the algebra achievement test, but the fact that he made the highest score on the Orleans prognosis test indicates that he must have learned a considerable amount of algebra during the first semester. His teachers have rated him as average in study habits.

The cause of failure seems to have been personal, the boy feeling that he was not being treated fairly. His parents have frequently taken his side in difficulties with previous teachers. He is an only child. He was absent frequently and made little effort to make up his work. He is making good grades this semester.
D.E.

Freshman, Age 18, Male
Country Student
Eliminated

Last semester, he failed in algebra and manual training. He did not enter grade school until he was ten years of age. His parents are dead, and he was adopted by his aunt at the time he entered elementary school. No previous information is available. The Otis test shows an IQ of 101 and the Stanford test places him in the 8.8 grade. This semester he was passing in all subjects except literature, but he dropped from school to enter a C.C.C. camp during the second six-weeks. While he was definitely over age, he could probably have finished high school.
N.E.*

Third Year, Age 17, Fem.
City Student
Prognosis—Unfavorable

In five semesters, she has earned nine credits. Her teachers considered her subnormal, but the Otis test places her IQ at 106. The Stanford achievement test places her in the 9.3 grade. No record of grade school work is available. The family is self-supporting, but quite poor. She is the second of five children. The mother is a poor housekeeper and works outside of the home part of the time. The older boy graduated from high school about a year ago without any difficulty. He is clean and neat appearing. The father has appealed to the county welfare worker to try to get the mother to clean up the home. The youngest boy is partly crippled from infantile paralysis. The younger girl is reported as delinquent by the Junior High. N.E. herself came to high school dressed in dirty clothing of a heavy unsuitable sort and has had an offensive body odor. The school nurse visited the home and reported that the parents were cooperative, but the improvement has not been as extensive as hoped for. Her clothing is somewhat more suitable and is cleaner. She refused to take a shower in physical education classes, probably because she is ashamed of her underclothing and ashamed to appear nude in front of the other girls.

In her school work, she asks no questions, can very
seldom be induced to recite in front of the class. She commonly reports that she has not prepared her lesson when she really has done so. Undoubtedly she is very conscious of her appearance. She is so sensitive that any efforts to help her are usually refused. At present she is failing in American history and in bookkeeping. Her case presents a real problem, but since improvement is noticeable there is still hope for a better adjustment.
In three semesters she has earned two credits. No elementary school record is available. The Otis test shows an IQ of 95, but this may not be correct since she was quite indifferent to the test and gave up very easily. She is easily antagonized and does not get along well with her teachers. A general indifference toward school seems, however, to be improving thru the efforts of her mother. Efforts were made to arouse pride in achievement and to encourage interest and effort. Last six-weeks, she passed in three subjects and will probably pass in all subjects at the end of the semester. No effort was made to make a complete study of the girl's difficulty since she seems to be overcoming it with the aid of friendliness and sympathy. Three of her chums have been expelled from school, and two others have become more interested in their school work.
W.G.*

Second Year, Age 16, Male
Country Student
Prognosis--Favorable

He has earned one credit in three semesters. His
average grade on the eighth grade examinations was 63.
The Otis test shows an IQ of 103, and the Stanford achievement
test gives a grade level of 9.7. The Bell inventory
indicated a very unsatisfactory home adjustment. The
Principal confirmed this rating. The father takes very
little interest in the boy except for negative criticism
or discipline. The older brother and sister have both
been very successful in studies and extra-curricular
activities. Both have attempted to aid W.G. in his school
work. The result is that he has developed the feeling that
his parents, particularly his father, do not care for him,
and that they and his older brother and sister are ashamed
of him. He has developed the habit of truancy and it is
difficult to get him to face a difficult situation at
school. His teachers, however, report a more favorable
attitude now, and, since he is now passing in two of his
subjects, the outlook is more favorable than previously.
When the cause of his difficulty was pointed out to him,
and he was shown the excellent qualities he possessed,
the favorable impression he made on his associates and his
teachers (all of which was true), he seemed to develop
more self-confidence and it is to be hoped that, with
continued friendly encouragement, he will continue to improve his adjustment to the school situation. He will be able to play football on the regular squad if he passes three subjects this semester.
N.H.*

Second Year, Age 15, Female
City Student
Eliminated

She earned two credits in three semesters. She has been a member of a group of girls who are habitually truant. None of the group, however, have been involved to any serious extent with members of the opposite sex. No further material is available since she was expelled in February, together with a chum, as a result of their truancy.
H.H.*  Second Year, Age 15, Male
City Student
Prognosis--Doubtful

In three semesters, he has earned five credits. In elementary school, he made about average marks, finishing in eight years. His IQ is 110 and he grades 9.3 on the Stanford achievement test. The Bell inventory rates him excellent on all four scales of adjustment. He is passing in two subjects now. However, there is some improvement in his attitude. He makes no effort to place the blame on anyone else, but says he could do it if he tried. He wishes to become an aviator. The outcome of his case is uncertain.
E.H.*

Freshman, Age 15, Male
Country Student
Prognosis--Favorable

He failed in all subjects last semester and is failing in three this semester according to the last grade reports. His eighth grade examination grades average 85. The Otis test gives an IQ of 102 and the Stanford achievement test a grade level of 7.4. His score on the algebra achievement test was one of the lowest, as was his score on the algebra prognosis test. However, at the end of the second semester he placed in the 14th percentile on the second achievement test in algebra. The Bell inventory indicated a very unsatisfactory home relationship. A visit to the home seemed to indicate the following facts: While his parents were not at all severe with him, still their discipline was largely negative. The boy received more criticism than praise. While usually responsible and trustworthy, last summer he left his work undone on several occasions to go bicycle riding with some boys with whom his father did not wish him to associate. As a result of the forthcoming criticism, and the withdrawal of some privileges, the boy developed the feeling that his father did not care for him and that nothing he could do would please him. Their house burned last fall and they are living in a temporary house. However, they are quite comfortable.

A program was worked out with his parents whereby they
are to avoid criticism and try to find opportunity to praise him. Both parents grasped the situation in an intelligent manner. At school there seemed to be some friction with the manual training teacher so it was felt to be advisable for him to drop that subject and give the extra time to his other subjects. The teachers had rated him very poor on study habits and it was difficult to get them to put forth much effort to aid him in readjusting himself. However, he is doing fairly well in algebra and there is some hope for him in English. If he can pass one or two subjects this semester, he will probably make his way successfully next year.
I.J.  
Freshman, Age 16, Female  
Country Student  
Prognosis--Favorable

She failed only in algebra last semester, and is now passing in all subjects with an average of 3. Her IQ is 98 on the Otis test and the Stanford achievement test places her in the 8.5 grade. The failure in algebra seems to have been due to slowness which made it difficult to keep up with the class. She is now making average marks in all subjects.
H.K.*
Second Year, Age 19, Female
City Student
Prognosis--Unfavorable

In three semesters she has earned four credits. She entered high school on a special diploma, having failed in the eighth grade in arithmetic and history. She was in the slow group in the junior high school and repeated the 3b, the 5a, and the 6a grades. She is conspicuous because of a shuffling walk, poorly coordinated speech, and heavy glasses. In discussing school work with her, one finds her saying over and over, "I can get algebra all right but--". Or it may be some other subject, but there is always some part she does not understand. She is regarded as subnormal, but her Otis test gives her an IQ of 92. In this test she repeatedly started before the signal was given, but always finished long before the time was up. On the Stanford achievement test she scored in the 7.8 grade. The Bell inventory scored her average or better on all four ratings, which is obviously untrue in the social adjustment rating. She is very slow to understand explanations in her school subjects, but frequently aston-ishes one with unsuspected information or insight. She never does a lesson for herself if she can possibly get anyone else to do it for her. She is rarely able to pass a test. The other girls avoid her, with the exception of N.E. However, they chum together very little outside of
school. No medical report is available at present to confirm the suspicion of pathological defect.
A.L.O.  
Freshman, Age 16, Male  
City Student  
Prognosis—Favorable

He failed everything except world history last semester. His grade-school record is excellent with the exception of the fact that he repeated the 3b grade. The Otis test gives him an IQ of 108, and he tests 8.5 on the Stanford achievement test. The Bell inventory rates him unsatisfactory in health and retiring socially. It was noticed that he gave up easily during the tests, that he gave many absurd answers, and that he seldom used all of the time allotted. He was out of school because of illness during the first semester and again at the beginning of the second semester. It is very likely that the illness, coupled with the fact that he gives up easily, and that he is too retiring to ask questions or get extra help, caused the failures last semester.

During the second semester, he has been truant frequently, using illness as an excuse. In the last six weeks, he reported eye difficulty altho the physical education examination listed him as 20/20 on both eyes. An eye examination will be given before he enters school next fall. He dropped out of school ten days before the end of the semester to go to work in the strawberry fields.
E.L.  

Freshman, Age 18, Male  
City Student  
Eliminated

He failed in algebra and English last semester. He was in the slow group in the junior high school, but did fairly good work. The Otis test gives him an IQ of 104. The Columbia test for algebra placed him in the 17th percentile. No further information is available since the family moved to Portland in February.
H.M.*

Freshman, Age 17, Male
Country Student
Prognosis—Unfavorable

He failed in all subjects except manual training last semester. He received a special diploma from the elementary school, having failed in writing and civics. His parents moved into the district shortly before the end of his eighth grade work. About two years ago, a horse kicked him on the left temple and an opening in the skull remains which makes it necessary for him to guard himself against any injuries to the area. The Bell test rated him as unsatisfactory in home adjustment, but investigation showed that he had failed to understand the questions. His home adjustment is excellent. He tests in the 5.7 grade on the Stanford achievement test, and the Otis test gives an IQ of 81. These tests may be in error due to failure to understand written directions or questions. His score was zero on the disarranged sentences. On the Binet test, he would appear to have about a mental age of 12 from the indications received thru the giving of only the portions of the test calling for no reading on his part. However, if the parts based on vocabulary were excluded, he would place about 14 years. He does not read at home. His parents report high mechanical intelligence. His literature teacher reports that he is hopeless in that
subject. In the problem class in algebra, he is doing very well. He was advised to drop general science and concentrate on the other subjects. He shows ability to handle the work, with the exception of literature, but is very slow.

He was taken for examination to the University of Oregon clinic for students having reading difficulties, and the examination confirmed the fifth grade rating in reading indicated on the Stanford achievement test. It appeared that he learned more readily by motorized processes, and it was suggested that he be taught spelling and word groups by means of a typewriter, and that special reading instruction would be beneficial. However, it is unlikely that the necessary tutoring by a skilled teacher will be available.
O.M.*

Second Year, Age 16, Male
City Student
Prognosis—Unfavorable

He has earned three credits in three semesters. In
the junior high school, he was in the slow group, but passed
in all subjects except seventh grade arithmetic. The Otis
test gives him an IQ of 95, and the Stanford achievement
test places him in the 8.5 grade. The Bell inventory
shows no maladjustment except that he is rated as retiring
socially. He is the fourth of eight children. One brother
finished high school. A younger brother and sister are
now in high school and are not having any difficulty.
A brother just older dropped out of high school to drive
a truck after attending high school one year without earning
any credits. All of them attending high school have
been neatly and adequately dressed, altho they have to
furnish most of their own clothes and school supplies.
The parents are poor and the home is reported to be untidy.
In class he is well behaved, but can not be interested in
the class work nor induced to put forth any effort in the
preparation of his lessons. It is extremely difficult
to obtain any response whatever in class, altho he does
not seem so self-conscious in individual conferences.
He is failing in all subjects except general science.
Last semester he passed only in general science and manual training. In the junior high school, he was in the slow group, but made average grades. The Otis test indicates an IQ of 90. He placed in the 6.6 grade on the Stanford achievement test. The algebra test placed him in the eighth percentile. The Bell inventory indicated that he was retiring socially. His teachers rated him as somewhat poor in his study habits. The combination of shyness with slowness probably accounts for the failures last semester. He was failing in science and literature according to the last grade report, and dropped out of school during the second six-weeks of the second semester.
C.N.  

Freshman, Age 16, Male  
Country Student  
Prognosis--Favorable

Last semester he failed in algebra and manual training. On the eighth grade examinations he averaged 65. His IQ is 99, and his grade placement is 9.8. He placed in the 6th percentile on the first algebra test, and in the 53d on the second. He is rated by his teachers as average in study habits. He is the oldest of four children. His parents are in fair economic circumstances and maintain a home comparable with other farm homes. He seems to be very slow in his school work and might have done better with a lighter load. He is now passing in all subjects except mechanical drawing.
E.P.  Freshman, Age 15, Male  
Country Student  
Eliminated

He failed everything except general science last semester. In elementary school, he made an average of 87 on the eighth grade examinations. His IQ is 109. His achievement test is not complete, but he averages 92 grade on the parts completed. He is rated as average in his study habits. He placed in the eleventh percentile on the algebra test. In this semester, he failed three subjects at the end of the first six-weeks and dropped out of school.
L.P.*  
Freshman, Age 15, Male  
Country Student  
Prognosis—Doubtful

Last semester he passed only in manual training and general science. His IQ is 104 on the Otis test. In the Stanford achievement test, however, he placed in the 6.4 grade, and in the arithmetic computation part he placed 4.1. His average on the eighth grade examination was 79, arithmetic being his weakest subject. His teachers have rated him as poor in study habits. His cause of failure is partly irregular attendance, partly self-consciousness which hindered participation in classwork and encouraged truancy, and partly poor elementary school preparation. He is failing all subjects except mechanical drawing.
M.R.*  Freshman, Age 15, Female Country Student  
Prognosis—Unfavorable

She failed in all subjects last semester. Her average on the eighth grade examinations was 64. The Otis test indicates an IQ of 89. However, on the Stanford achievement test, she placed in the 5.6 grade, with the literature test 2.6. Her teachers have rated her as somewhat poor in study habits. Her parents are poor and their home is lacking in books and magazines. An older sister has dropped out of high school after attending for two years and making only a few credits. M.R., like her sister, is docile, but is almost totally lacking in ambition or initiative. There is no tendency to reason—her learning is largely imitative. She feels that if she fails in her work, her parents will not compel her to attend school longer. She is failing in all subjects.
C.S.*

Freshman, Age 17, Male
City Student
Prognosis--Doubtful

He failed all subjects last semester. He entered on a special certificate, having failed in history. The Otis test indicates an IQ of 97. The Stanford achievement test places him in the 7.8 grade. On the first algebra test he made the 14th percentile—at the end of the semester he made the eighth percentile on the second test, but received his credit in algebra. He works in the afternoons frequently and misses his algebra class and his study period on those occasions. His English teacher rates him as hopeless in literature. He is over age and is not very interested in school. He is passing in algebra and mechanical drawing.
W.S.O. Fresman, Age 15, Male
Country Student
Prognosis—Favorable

He made an average of 88 on the eighth grade exam-
inations and passed in all subjects last semester except
algebra. He appears to have gotten off to a poor start
in algebra, and was too timid to demand the help that he
needed. His IQ is 108 and his grade placement 9.3. The
Bell inventory rates him as retiring socially. He ob-
tained a score in the 17th percentile on the algebra test
and passed the final examination in algebra at the end of
the first semester. He is now passing in all subjects,
and is making a grade of 2 in algebra.
E.T.°  
Freshman, Age 18, Male  
City Student  
Prognosis—Favorable

He finished the eighth grade with fairly good marks altho he was in the slow group in the junior high school. He stayed out one year before entering high school and worked at odd jobs. His father is one of the school janitors. E.T. helps his father sweep after school and works on a milk route for two hours in the evening. Last semester he failed only in algebra, but was discouraged and would have quit school except for the urging of his father. He is about midway in a family of 13, few of whom have stayed long in school, partly due to the fact that the economic condition of the family has necessitated their finding work at an early age. Other family conditions are favorable. He has an IQ of 102 and a grade placement of 10.0. He is now passing in all subjects and is making a grade of 2 in algebra.
L.W.*

Second Year, Age 15, Female
City Student
Eliminated

In three semesters, she earned two credits. Last semester she dropped out of school soon after school opened. She made average or better marks in the junior high school. In high school, her work was good when attending, but she was frequently truant or ill. Her mother covers up her truancy whenever possible. Her father has been dead for a number of years, and her mother is a bookkeeper in one of the local stores. There are no other children. The mother is on intimate terms with the daughter, but does not have much control over her actions. L. has no wide circle of friends, but has very intimate chums which she changes from time to time. She is going steadily with an older boy who is working in Portland. The mother does not disapprove very strongly, feeling that she would lose all control over the girl if she attempted to restrict her. Her IQ, according to the Otis test, is 108. The Bell inventory indicated better than average adjustment. She has astigmatism for which she was fitted with glasses, but she refused to wear them. She frequently suffers from sick headaches which usually appear at convenient times. She dropped from high school again early in March rather than face discipline for truancy.
L.F.W.*  Second Year, Age 19, Female
Country Student
Prognosis—Favorable

She finished the eighth grade with an average of 85 on the examinations. Her IQ is 93 and her grade placement is 7.5. She was feeling poorly, however, at the time she took the tests, so there may be some error in the results. In three semesters she has earned three credits. She suffers from sinus trouble and has to stay home when the weather is bad. (She has to walk about a quarter of a mile to the school bus) Her failures are without doubt due to her health condition. Her father works in Portland, but moved his family to the country because of L.F.'s health. L.F. is very determined to continue her high school work without further loss of time. However, when this study began, she was incomplete in three subjects from last semester and was already incomplete in three this semester. She was induced to drop one subject and arrangements were made to assist her in making up the work from last semester. She has now made up all the credits from last semester and is passing in all subjects. She appears greatly improved in health this spring.
Summaries of Test Results

TABLE I

Columbia Research Bureau Algebra Test
Test 1, Form A

<table>
<thead>
<tr>
<th>Standard Percentile</th>
<th>Score</th>
<th>Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>26.5</td>
<td>21-23</td>
<td>X</td>
</tr>
<tr>
<td>17.0</td>
<td>18-20</td>
<td>XX</td>
</tr>
<tr>
<td>14.0</td>
<td>15-17</td>
<td>XXXX</td>
</tr>
<tr>
<td>8.0-11.0</td>
<td>12-14</td>
<td>XXX</td>
</tr>
<tr>
<td>4.0-8.0</td>
<td>9-11</td>
<td>XXX</td>
</tr>
<tr>
<td>1.5</td>
<td>6-8</td>
<td>X</td>
</tr>
<tr>
<td>0.7</td>
<td>3-5</td>
<td>X</td>
</tr>
</tbody>
</table>

(X = one student)

If 7 per cent of the students should fail, (those shown below the line in the table), then most of the members of the problem class should have received a passing grade, according to the Columbia Research Bureau test. In most cases, however, the failures were justified by the fact that the students had not done a sufficient amount of daily work. This Form was given to 15 students who had failed Algebra I and were enrolled in the problem class.
TABLE II

Columbia Research Bureau Algebra Test
Test 1, Form B

<table>
<thead>
<tr>
<th>Standard Percentile</th>
<th>Score</th>
<th>Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>70</td>
<td>36-41</td>
<td>X</td>
</tr>
<tr>
<td>47-60</td>
<td>30-35</td>
<td>XXX</td>
</tr>
<tr>
<td>32-43</td>
<td>24-29</td>
<td>XXX</td>
</tr>
<tr>
<td>17-26.5</td>
<td>18-23</td>
<td>XXX</td>
</tr>
<tr>
<td>8-14</td>
<td>12-17</td>
<td>XXX</td>
</tr>
<tr>
<td>1.5-6</td>
<td>6-11</td>
<td>XX</td>
</tr>
<tr>
<td>0-0.7</td>
<td>0-5</td>
<td>XX</td>
</tr>
</tbody>
</table>

Some of the students in the lower levels on this test made lower scores than they did at the beginning of the semester. However, all of the students who did well on the first test raised their scores considerably. Some students who obtained lower scores on the second test passed. In general, the students who were near the passing mark at the end of their first semester's work in algebra profited by repeating the course, and will undoubtedly find algebra II much easier than they would have if they had not been compelled to repeat the course.
### TABLE III

**Otis Group Intelligence Scale**

**Advanced, Form A**

<table>
<thead>
<tr>
<th>I.Q.</th>
<th>Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>120</td>
<td>X</td>
</tr>
<tr>
<td>110-119</td>
<td>XXXXX</td>
</tr>
<tr>
<td>100-109</td>
<td>XXXXXXXX</td>
</tr>
<tr>
<td>90-99</td>
<td>XXX</td>
</tr>
<tr>
<td>80-89</td>
<td>XX</td>
</tr>
<tr>
<td>79</td>
<td>X</td>
</tr>
</tbody>
</table>

On the Otis Group Intelligence Scale, it is to be noted that the IQs range from 79 to 120 and that they are distributed through the entire range approximately according to the normal distribution curve. As many students received an IQ greater than 110 as received an IQ less than 100. This indicates quite clearly then that there is little relation between intelligence and failure, at least among freshmen. It is probably true that the least intelligent ones drop out of school whereas the more intelligent make their adjustments and continue. It is also probable that the students of lower intelligence do not make high marks. However, among freshmen, other causes of failure overshadow intelligence.
TABLE IV

New Stanford Achievement Test
Advanced Form W

<table>
<thead>
<tr>
<th>Grade</th>
<th>Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>X</td>
</tr>
<tr>
<td>10</td>
<td>XXX</td>
</tr>
<tr>
<td>9</td>
<td>XXX</td>
</tr>
<tr>
<td>8</td>
<td>XXXX</td>
</tr>
<tr>
<td>7</td>
<td>XXX</td>
</tr>
<tr>
<td>6</td>
<td>X</td>
</tr>
<tr>
<td>5</td>
<td>XX</td>
</tr>
</tbody>
</table>

(X = one student)

These students were in the 8.5 grade. On the Stanford achievement test, seven of the seventeen students tested, placed above grade, four at grade, and six below grade. The range, extending from the 5th grade to the upper limits measured by the test, is probably as great as would be found in the entire freshman group. It is quite apparent then that knowledge of the grade school subjects as measured by this test does not relate directly to failure among the freshmen students. Poor background will contribute to failure, but in general it is of lesser importance as compared with other causes of failure. The test was, however, quite valuable in the individual case studies. Certainly the student who has not accumulated a fair amount of information during his elementary school period would not, ordinarily accumulate
new material very rapidly in high school. On the other hand, it is seldom that a student made uniformly low scores throughout the test, so the test proved to be diagnostic to a considerable degree. Students showing low scores in reading and literature seemed to be the most handicapped.
Conclusions From Case Studies

Of the thirty-one case studies made, 13 have made their own adjustment without need of outside help, five are still definitely maladjusted, six have dropped out of school, three have a doubtful prognosis, and four were aided to become adjusted. The prognosis of the last four was unfavorable prior to this study. The first 13 never needed the help, but since they had failed algebra the first semester, they were included in the study. They serve as examples of students who may fail courses without being definitely misadjusted to the school situation. Nine of the 13 students failed one or more subjects needlessly. Any form of advisory service could have given the assistance necessary to have prevented their failures.

Failure in algebra due to lack of mental ability does not appear among the studies except as a contributory factor. One explanation is that those students who were lowest in mental ability made no attempt to carry their high school work into the second semester, and, therefore, did not appear in the problem class. Some of the members of the problem class might, however, have done considerably better if they had been limited to three subjects during the first semester so they could have had additional time for the other subjects.
Many of the failures appear to have come about thru a misunderstanding or misadjustment due to the unfamiliar methods used in high school, the strange surroundings, the change from a small group of associates to a large group, the freedom from constant supervision, and the other changes incident upon transfer from the elementary to the high school system. This was especially noticeable among the students coming from the rural districts.

Several of the failures were due to sickness alone. These cases were among the 13 who made their own adjustment (if they were ever misadjusted). In other cases where sickness was contributory, the student, finding himself behind the class, was too timid or uncertain to make up his work. Some of these students reacted by simply giving up and making no further effort to continue the course.

Personal misadjustments between pupil and teacher appeared to account for several failures. In many cases the teacher was not conscious of the misadjustment. Without some organized facilities for investigating the cause of a student's difficulties, it is unlikely that such adjustment problems could be located and remedied.

In a few cases, the cause of the failure appeared to be a definite home situation. In only one case, however, (E.H.) was it possible to aid in improving the adjustment thru
improvement of the condition causing the difficulty. In two cases (C.B. and W.G.), improvement in the school situation was noted after steps were taken to minimize to some extent the effect of the home situation on the student's school problems.

In some cases, the grade school preparation was quite faulty, but in only one or two cases was it so low as to be more than a contributory cause of failure. In these cases, it is probable that the faulty work in the grades was due to a situation which still exists in the high school. It is significant that all but one of the problem students entering from the city system were in the slow group in the Junior High School.

Many of the students of lower mentality and with poorer preparation dropped out of school before a study of their difficulties could be completed. This would tend to confirm the belief that, while the relation between freshman failures and intelligence is negligible, there may be a definite relation between intelligence and elimination from school.

Among the five cases definitely maladjusted, one (H.K.) shows evidence of pathological defect which has not been reported on by the family physician. Another (N.E.) has a difficult home situation which, while improving, still calls
for an unfavorable prognosis. A third (M.R.) has an IQ at the lower end of the normal range coupled with a poor home environment. A fourth (H.M.) appears to be motor minded. In the remaining case (O.M.), no cause sufficient to explain the difficulty could be discovered. The prognosis in these cases is definitely unfavorable.

The case study method was of benefit, therefore, to only a small percent of the members of the problem class. Any program of guidance involving these case study methods would, therefore, center around the locating of those individuals who need the assistance and who could profit by it.
Establishment of a Counseling Service

Hillsboro High School needs an organized guidance program using the case study method for the students who can not make their own adjustment to the school situation, and extending counseling service to students having temporary difficulties. The program should be under the direction of a member of the teaching staff who has had training in the use and interpretation of psychological tests and in the application of the case study method. This director would correlate the activities and centralize the information obtained by the school nurse and the dean of girls with his own psychological work in regard to the students to be included in the case study program.

In addition to this work, which would be strictly remedial in nature, the director would naturally encourage and aid in the dissemination of information designed to enable the other members of the student body to make a wiser choice of studies and vocation. Both group education and individual counseling methods would be used in this work, but there would be no effort to include those students in the case study program.
Since the average student could undoubtedly succeed equally well in any of a wide range of studies or in any of a wide range of vocations, there would be no value in a system of guidance to seek out any one group of studies or any one vocation, and recommend it to the student as the one he should follow to the exclusion of all others. Special attention should be given, therefore, to the students who do not fit into the group they have chosen. In most cases, the ordinary counseling methods would be sufficient to correct the difficulty, but when the student shows extensive difficulties, the case study method would be used to seek an increased adjustment to the school situation or to their social group. It is, then, quite apparent that the case study method can be of practical value only when it is restricted to the students who are definitely maladjusted; and those students can be located only after such maladjustment becomes apparent. The case study would not be a brief affair, but would continue until the student was adjusted to the school situation; until the cause was determined and the student diagnosed as hopeless, or until all the avenues of investigation have been explored without the discovery of an adequate cause of the difficulty. The last two conclusions would be reached reluctantly, and the case would be kept open to the extent that new information
shedding further light on the problem would be given full attention.

The attention given a few students thru their selection for study has a tendency to arouse an undesirable reaction from the fact that such a study is not made of all the students. However, the manner and attitude taken by the counselor, the tactful way in which he approaches the question, and his friendliness toward the student should, to a considerable degree, minimize these effects. Students should feel free to come to the counselor for help and advice whenever they feel the need for it. In fact, it is very important that the whole service should be kept as much as possible on the plane of a voluntary friendly service, wholly removed from the school administration or from disciplinary activities in as far as the individual student is concerned.

There is no reason why boys should not seek the advice of the dean of girls, nor why girls should not seek the advice of a male adviser. The title, "dean of girls" is undesirable for that reason and should be replaced with "counselor", "advisor", or some equivalent title tending to obviate any restriction of the counseling service based on sex. The school nurse should be freed as much as possible from disciplinary duties in order that she may serve to a greater extent as a health adviser.
Costs and Benefits to be Expected

By the concentration of the case study work on the comparatively few students who really need it, the cost of the program is greatly reduced. It is a common procedure in high schools to give intelligence tests to the entering freshmen each year. In general, very little benefit was ever derived from the tests as far as the average student was concerned. It would be of more value to everyone concerned if less money was spent on these tests and the money saved was spent on other tests of service in case study work. The cost of the tests needed for the entire program would exceed very little the cost of the customary intelligence test program.

The ordinary physical examination given in connection with the physical education program may be sufficient for the purposes for which the examination was designed, but it is not of much assistance in the study of problem cases. A much more searching examination is needed for these students, since problem behavior is frequently the direct consequence of a physical condition.

If the school nurse could be given sufficient time, she might be able to take over some of the home contacts in connection with the case study program. Where the nurse has had special training and experience in social work,
this arrangement would be very practical. However, she would have to be relieved of some of her other duties.

It costs the taxpayers of this district more than seventy-five dollars each year to provide high school training for one student. If that student, thru misadjustment to the high school situation, gains neither credits toward graduation nor information, habits, or skills tending to aid in his adjustment to the social world outside, that student has received no return, and the money paid by the taxpayers for the education of that student has been wasted. If the readjustment of any of these students could be achieved thru the efforts of the counseling staff, the return to those students would more than justify the expense. The money value of such help to the student is, of course, not measurable, but it would far exceed the per capita cost of operating the school since it would, in some cases, make the difference between a reasonably happy adjustment to society and an adjustment hampered by decreased earning power and serious personality defects. It may be that few of the students would benefit from the case studies, but the return to that few would justify the entire program; and this does not consider the expense such misadjusted persons may represent to society when he leaves the school.
Need for a Central Record System

A centralized record system is necessary to make available to the different members of the counseling staff and to preserve for future reference the information obtained from the different sources. These records would not be open to teachers and would, of course, be kept away from students. Such records should include the results of psychological examinations; a summary of the success in high school as measured by grades; an elementary school record in as far as it can be obtained; a record of attendance at least sufficient to indicate irregularities and long periods of absence; the cause for the absences; results of physical examinations; and other information obtained in the interviews with parents or students, or from the teachers. Probably the best way to assemble this material would be to write all reports and information on 8½ by 11 inch sheets, and file it in manilla folders under the name of the student. Such records would be cumulative since they would be added to from time to time during the student's stay in school. The responsibility for the maintenance of the records would be given to the director of the counseling program.
Opportunity for Counseling

Each member of the counseling staff would have to be given time during which he would be able to meet students and obtain confidential interviews. (During this time it is essential that the counselor should be in plain view of a third person.) Since the counselors would be members of the teaching staff, each would have to be scheduled at least one free period during the day for these interviews. Since it is impossible as a rule for country students to be present outside of school hours, the counselors should have the privilege of calling a student out of class when no other opportunity for an interview can be created.

Procedure

If the number of failures during the first semester is to be reduced, it is important that evidence of misadjustment to the school situation be reported by the teachers as soon as it becomes apparent. This may make possible changes of schedule if there is need for it as well as enabling remedial work before the student has dropped too far behind. The counselors should watch for other evidences of misadjustment such as irregular attendance, evidence of social misadjustment, evidence of health or home difficulty, etc.
In most cases the first step would be an interview with the student, at which time the counselor would try to build up a friendly relationship, obtaining the confidence of the student as far as possible, and determine the student's viewpoint on the difficulty. In some cases, it might be valuable to obtain reports from other teachers prior to the interview. In any event, while the students should not be permitted to feel that his story is not being fully believed, the more important fact should be checked to determine the weight they should be given by the interviewer.

If it is felt that the case warrants more careful study, psychological tests should be given, the nature and content varying according to the particular case, but probably including an intelligence test, a general achievement test, and a personality inventory. In many cases, achievement or aptitude tests in special subjects would be advisable. A searching physical examination should be obtained, and it might be well precede the psychological examination. If these procedures failed to determine the cause of the difficulty, they would in many cases give leads that would enable the cause to be obtained thru further interviews with the students, teachers, or parents.
Results to be Expected

It is not to be expected that the cause of the difficulty will be obtained in every case. If it is obtained, it will, in many cases, determine what remedial steps should be undertaken, but in some cases there may be nothing that can be done to remedy the situation. However, in most of the cases, the adjustment may be improved sufficiently to permit the student to continue his school work without the necessity of making a complete case study. The important part of the work is to make practical use of the information that is obtained so that the school may aid the maximum number of their students to make their best adjustment to the situation into which they will be projected at the close of their school career.